SENATE COMMITTEE ON INDIAN AFFAIRS
Oversight Hearing on Internet Infrastructure in Native Communities: Equal Access to E-Commerce, Jobs and the Global Marketplace.

October 6, 2011

Testimony of Carl Marrs, Chief Executive Officer, Old Harbor Native Corporation and the Kodiak-Kenai Cable Company

Chairman Akaka, Vice Chairman Barrasso, Members of the Committee:

Camai' (*hello*), my name is Carl Marrs. Thank you for the opportunity to testify today before this distinguished Committee on the subject of "Internet Infrastructure in Native Communities: Equal Access to E-Commerce, Jobs and the Global Marketplace." Thank you also for holding an oversight hearing on this subject matter that is vital to Alaska Natives.

I serve as the Chief Executive Officer of the Old Harbor Native Corporation (OHNC) authorized by Congress and incorporated pursuant to the Alaska Native Claims Settlement Act (ANCSA). I'm here to testify on behalf of this corporation and its subsidiary, the Kodiak-Kenai Cable Company (KKCC). Further, my testimony is directly relevant to, and hopefully will be of benefit to, all Alaska Natives who do not have access to genuine, all-weather, highly reliable, high-capacity, and high-speed broadband.

I am an Alutiiq and was born and raised in Seldovia, Alaska in the South-central region of the state. I'm a Tribal Member of the Native Tribe of Seldovia and a shareholder of Seldovia Village Corporation and of the Cook Inlet Regional Corporation. Both of these Native corporations were also authorized and mandated by the United States Congress through its passage of ANCSA in 1971. I served in the U.S. Marine Corp from 1970-1972. In 1973, I went to work for Cook Inlet Region Inc. (CIRI) starting as a land trainee and in 1995 I was appointed the President and CEO, serving over 30 years with CIRI. I have been involved in many Alaska Native Claims Settlement Act issues since the beginning and have seen many positive changes, but there are still many challenges to ensure that Alaska Natives, especially those in rural Alaska have the ability and tools to advance them from the alarming unemployment and poverty rates, teenage suicide rates, health and social issues, and other maladies that stem from a near absence of paying jobs many communities currently experience.

Overview

As most in the U.S. recognize, real time high-speed, high-capacity, reliable access to the Internet is an imperative in today's global economy so as to see real jobs created through E-commerce. This reality was the genesis of OHNC's major effort to bring all-weather, fiber optic marine cable based broadband to a hub on Kodiak Island. Once that was achieved as it was in 2007, the corporation's goal has been to extend that telecommunications capability to all other Native communities in the Kodiak Archipelago. KKCC is in the midst of doing that.

Further, extending that capability to other Alaska Natives (and non-Natives living in rural Alaska) in remote, unserved and underserved areas of Alaska led the OHNC to attempt to obtain NTIA and RUS grants and loans under the 2009 stimulus package. This quest to take high-speed, high-capacity, all-weather broadband to other Alaska Native villages was set back when the application for stimulus funding did not receive approval. Notwithstanding that set-back, the corporation is still supportive of this goal and hopes that it can become realized in the not-too-distant future.

The stakes are high in human terms in rural Native Communities in Alaska. Our youth need new and robust ways to obtain a good education, including advanced education and vocational skills and training, and ways to make a living, while residing in their villages. Before broadband, this dilemma seemed almost insolvable. With access to such technology, providing state of the art telemedicine, education, cultural and social enrichment, and economic development become much more achievable.

Background of ANCSA and the Village of Old Harbor

Old Harbor Native Corporation is one of 252 Alaska Native village corporations authorized by Congress in 1971 with its passage of ANCSA. The purpose of that Act was to settle aboriginal claims of Alaska Natives to the lands that were purchased by the United States from Russia in 1867. A key part of the impetus to finally settle such aboriginal claims was that the United States needed to delineate and clear title to land for a right-of-way for the construction of the Trans-Alaska Pipeline to transport oil discovered at Prudhoe Bay to the Valdez Marine Terminal.

The Native Claims Settlement Act was signed into law in 1971, and a few short years later, the pipeline was constructed and oil began flowing to Valdez and on to the market. The pipeline has been a major national energy security accomplishment since the oil has helped meet a significant portion of the daily U.S. demand of our nation for petroleum-based products. That pipeline also accounts for a significant portion of our nation's daily domestic oil production and it is the largest economic engine in our state. The discovery of oil and its development and production has helped our state to develop into a major economic player in the nation's energy-based economy. More importantly for the Native shareholders I represent, it has provided Alaska with a means to create jobs, investment and economic activity while our village corporations work to grow our own local economies.

In addition to being a national priority and imperative, ANCSA was developed by Congress as a visionary means of utilizing the free-enterprise system to help indigenous people economically. This was accomplished in ways that Congress and the Administration of President Richard Nixon thought would be more capable of bringing about economic advancement to Alaska Natives than would be possible through a Reservation-based, more traditional system as was used by the federal government in the lower-48 states with Indian Tribes.

Under the Act, Alaska Natives were authorized and mandated to utilize the corporate structure to hold land and capital and were given great latitude to pursue their own economic futures for the benefit of their shareholders. No one was fully prepared to shift from a traditional culture and economy to one that was based on Alaska Natives becoming CEOs and Members and Officers of Corporation Boards of Directors. This was extremely challenging for our Native Leaders. Just as the original 13 colonies struggled to transition economically to a confederation after the signing of the Declaration of Independence, and as several boom and bust cycles across the United States have demonstrated since the Revolutionary War, learning to create, finance and grow an economy is a challenging feat.

However, I am proud to say that since the passage of ANSCA in 1971, the growth, education, experience and leadership that Alaska Natives have gained about self-governance and corporate affairs in just the last 40 years, in stark contrast to the eons spent living as subsistence hunters and fishermen, is one of the most radical societal transformations in modern history. With some assistance from federal programs that helped such corporations to participate in federal contracting, many village and regional Native Corporations have become economic engines in Alaska representing approximately 12% of the gross state product and you can find

such Native corporation offices and employees working on job sites all across the country and internationally. In other words, the hope and vision of those who crafted ANCSA are now starting to become realized in spite of many bumps in the road.

Old Harbor Native Corporation was incorporated in 1973 and originally enrolled 329 shareholders under the Settlement Act. Today, there are approximately 335 shareholders residing primarily in Old Harbor, nearby in Kodiak, and in Anchorage as well as some outside of Alaska. The community of Old Harbor is rich in history and culture with the Ocean Bay Culture of Alutiiq Natives on Sitkalidak Island located across the Sitkalidak Strait from the village. That island is owned by OHNC and evidence of our people's use of the land dates back 7,500 years in terms of human occupancy.

The people of this village and other Alutiiq Natives survived "contact" with outsiders as seafaring nations reached the shores of Kodiak Island. The first Russian settlement in Alaska was at Three Saints Bay about 8 miles from the current village of Old Harbor. This and other contacts with the outside world brought infectious disease epidemics for which Natives had no natural immunities to protect themselves. Such epidemics devastated many communities on Kodiak.

In relatively recent history, this village saw a number of homes and infrastructure destroyed by the 1964 earthquake and tsunami that hit Alaska. In that tsunami, many villagers ran up the mountains behind the village to safety. The water rose above the entranceway and window sills of the Three Saints Church in the village, one of the oldest churches in North America. After the waters receded, villagers were stunned to see that none of the water had come inside the church! The people and the church had been delivered from the dangers posed by that tsunami and they continue to consider this event to be truly miraculous.

The village has a proud history and tradition of subsistence hunting, generations of subsistence and commercial fishing and a strong feeling of family and self-reliance.

Importance of Education, Training and Access to Technology

Old Harbor has long recognized that a key to its long-term survival and viability is the investment in education and training of its shareholders. One example of such "investments" in our people is the current Director of the Alutiiq Museum in Kodiak, Alaska. This young man received scholarships through our Native Corporation's scholarship program. He received his PhD. from Harvard in

anthropology and lived with nomads in Russia for nearly two years as part of his studies. Further, just two years ago, he became a recipient of a MacArthur Foundation "Genius" award for his work in Alutiiq anthropology and archaeology. Also, Katherine Gottlieb another OHNC shareholder is a recipient of that same award. The village feels blessed and seeks to do all that it can to ensure that this rich legacy of education and achievement continues for its villagers. The work of its Native Corporation is one of the keys to achieving that goal.

In the 40 years that have passed since the enactment of ANCSA, the people of the village have worked hard to transition from a subsistence lifestyle to a combination of subsistence and a cash economy. In 1973, few Alaska Native villages, had people with the requisite experience to incorporate and run a for-profit corporation. It has, therefore, been a long, hard struggle for Alaska Natives in general, to help provide economic opportunity for its people, which is still a work in progress.

In addition to transitioning to a village entity operating under a corporate structure for economic development purposes, the village also has had to deal with the challenges, remoteness, and logistical obstacles and costs inherent in living on an island with the only transportation to and from the village being by air or water. The village still faces these challenges today as treacherous weather, high winds, lost access to fishing, and limited and expensive transportation options remain a continual way of life for villagers and makes doing almost anything with other parts of the state or nation or the world a formidable challenge. As a result, the village long ago recognized that it had to take proactive steps through its city, Tribal and corporate structure to close some of the technological gaps that adversely impact opportunities for new ways to make a living, obtain an education, acquire health care and achieve basic communications options for the village.

In 2002, OHNC, after identifying the need for a fiber optic cable telecommunication system connecting Kodiak Island and the Western Kenai Peninsula with Anchorage, formed the Kodiak-Kenai Cable Company (KKCC) to engineer, construct and operate the first of its kind subsea fiber optic-cable system to serve the Kodiak region and provide redundancy to the existing cable system linking Alaska with the lower-48 and the rest of the world.

Over several years, the Corporation, joined by Ouzinkie Native Corporation and working with the Alaska Aerospace Development Corporation (AADC), proceeded with the design, financing and permitting of the Kodiak-Kenai Fiber Link Project (KKFL). Construction of the $38 million dollar project was

completed in 2006 within budget and ahead of schedule and KKCC began providing service to telecommunication common carriers in 2007. The system, with landing sites in Anchorage, Kenai, Homer, Kodiak, Narrow Cape and Seward, serves approximately 10 (ten) percent of the State's population and provides high-speed broadband connectivity via a secure, state-of-the art submarine fiber-optic cable.

The Company operates as a "carriers' carrier" offering high-speed, broadband capacity and services to local and long-distance exchange carriers for internet, telephone and other data and video services to promote full and open competition in these remote underserved markets.

The KKCC system aids national defense and marine safety for one of the largest fishing fleets in the world by providing secure telecommunication services to the nation's largest Coast Guard base located on Kodiak Island. The system also serves the Alaska Aerospace Development Corporation (AADC) Kodiak Rocket Launch Facility, located at Narrow Cape on Kodiak Island. As the only access point to secure, high speed fiber optic connectivity in the region, this strategic asset is considered critical to the development of the Ground-based Midcourse Missile Defense System. In addition, just last week the US Military launched a Minotaur IV+ rocket, with a TacSat-4 satellite as its payload, into orbit from this launch facility. This would not be feasible without the access to reliable, all-weather, high-speed fiber optic cable-based broadband that the KKFL project provided. According to news reports the satellite will enable a new level of communication coordination among various branches of the military.

A goal of OHNC is to extend the high-speed connectivity that is presently available in Kodiak to the outlying villages of the Kodiak Archipelago. For several years, OHNC had a government contract to digitize documents. Because such high-speed connectivity was not available in Old Harbor, the work had to be conducted in Anchorage by shareholders of OHNC. That provided high-tech jobs and was most helpful to all who worked on the project. However, had the broadband technology been in place in the village, that work could have been carried out in the rural village thereby providing high-tech jobs in that remote village that is in dire need of economic opportunities.

As a SBA 8(a) company performing government contract services, OHNC wants to employ as many shareholders as possible. The purpose of our corporation is to benefit our shareholders. This drive to employ or otherwise benefit shareholders comes from within as well as from the US government/SBA, whom

we consider to be our clients in any contract work we secure. However, all parties recognize the enormous challenge in finding contracts where work can be performed in a rural and isolated village. Doing large contract manufacturing, repairs and construction for contracts is not likely to make sense in a rural village. But much electronic and computer-based work can be done in remote villages and communities in Alaska and across the U.S. if broadband telecommunications infrastructure exists. This includes both fiber optic-based backbones as the main highways for the regions and additional fixed and wireless technologies to connect the end users with the backbone fiber.

The improved telecommunications speed and service reliability offered by our fiber optic cable enhances economic, educational opportunities and health services for all the communities served by this system. The importance of a redundant system is underscored by the reliability requirements for a project serving communities and other varied and important interests. As designed the system is more than sufficient to meet the total current requirements of Kodiak Island and the Kenai Peninsula and it may be upgraded as necessary to meet future traffic demand.

The Need for Broadband in Rural Alaska

High-speed broadband cable has changed the way the world shares information, does business, conducts research and delivers education. Nearly 40 percent of Alaska's land area (equal to nearly ten percent of the land mass of the 48 contiguous states) – the entire western half and North Slope of the state – does not have reliable, high-speed broadband connectivity. It is served instead by sporadic satellite service which is plagued by limited capacity and frequent disruptions. Participation in the modern global economy requires broadband connectivity. Communities without access to broadband are at a clear disadvantage. Even recent investments in infrastructure for select areas of western Alaska will end up relying on limited microwave middle mile connectivity rather than direct fiber optic interconnections to key regional hubs. It is likely that with the growth of mobile devices and the move by consumers to robust mobile video and downloadable applications that this new microwave infrastructure will reach its service capacity much sooner than originally anticipated.

Effort to Extend Benefits of KKFL to Other Unserved Areas

Among the benefits offered by the KKFL is the ability to handle large packets of telemedicine data. Today, as opposed to prior to the KKFL's construction, medical specialists in Anchorage and elsewhere are able to assist doctors in Kodiak

in the diagnosis and treatment, including emergency surgery, of patients in Kodiak, especially when movement of a patient to the mainland is not feasible or safe. This technology helps save lives and improves the level of health and medical care to rural Alaska, including particularly Alaska Natives who are oftentimes hard pressed to travel to Anchorage for medical care by reason of cost or weather.

As a result of its successful start up and operation of the KKFL system KKCC began to investigate whether these same benefits of such technology could be taken to other rural areas of Alaska, including Western Alaska, which is the largest "unserved" rural geographic region of the United States. OHNC started working in early 2009 towards providing a main fiber optic cable backbone to all of western Alaska through the construction of the Northern Fiber Optic Link (NFOL) which will extend the Kodiak Kenai Fiber Link system from Kodiak Island to the Aleutian Islands, Western Alaska and the North Slope with landing points at King Cove, Unalaska (Dutch Harbor), Naknek (King Salmon), Dillingham, Bethel, Nome, Kotzebue, Barrow, and Prudhoe Bay (Deadhorse). This is the last remaining geographic region of the U.S. that lacks a main fiber optic backbone, and if the U.S. hopes to close the technological gap across the entire country, this area cannot be forgotten and it needs to be addressed.

KKCC plans to continue to operate as a neutral "carrier's carrier" open to all carriers on an equal and non-monopolistic basis to promote competition among service providers. This business model allows KKCC to offer competitive pricing to OHNC carrier customers without also competing against them at the local level for retail and enterprise customers. This approach would spur further investments in new innovation, competition and increased service offerings for all the residents of Western Alaska and the North Slope were it to become a reality at a reduced cost over time, thanks in part to Universal Service Funding mechanism and support. In addition, the system would support critical fisheries research, climate and oceanic data collection, marine vessel monitoring and tracking (which is increasing through the Bering Strait and Arctic as the areas covered by ice diminish in size) Coast Guard activities, national defense, homeland security, health care, education, residential use, commerce, business and individual mobile usage.

Broadband service allows for the transmission of voice, data, and media services into homes and businesses at much faster speeds than satellite or landline dial-up service. Multiple applications can run simultaneously, including software, music, and video downloads occurring in seconds rather than hours, as has been the case in many areas of Alaska, and businesses can take advantage of real-time

two way teleconferencing rather than spending money and time on travel. This is especially critical in high-cost rural areas of Alaska.

Broadband in schools, universities, and libraries supports distance learning, research, and real-time video instruction. In hospitals, doctors' offices, and community clinics, broadband can facilitate remote medical consultations, patient care, and resource sharing, reducing the need for patients to travel long distances to receive medical care. Federal, state, and local governments use broadband to provide e-government services to citizens.

Education—Distance Learning (or e-learning)

Geographic isolation, limited course offerings (especially advanced courses) and shortages of qualified teachers are some of the barriers faced when planning course curriculums for students in these regions. The NFOL would improve delivery of education to rural areas whose teachers and students do not have access to the technology resources that are available to other teachers and students in most urban area of the U.S. With little opportunities for advanced education in the regions, the youth are required to leave their families in order to further their education.

In small villages once the student population falls below 10 students the state run school closes its doors. With high speed broadband that policy could be revisited since students could work with teachers and other students online in other parts of Alaska or around the world rather than being forced to leave their villages to acquire an education. In addition, in small communities that do not have a full range of college prep courses or AP courses, getting students online literally opens up a world's worth of curriculum to them in real time.

Better Healthcare Through Telemedicine

Telemedicine is the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration. Technologies used in telemedicine typically are: videoconferencing, the Internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications. The move to digital health records management places even more burdens on health care administrators in rural areas that lack broadband services

Telemedicine reduces the high cost of health care allowing patients to be provided with tele-consultation and treatment to reveal a significant cost savings in expenses towards travel, stay, and treatment at the individual level.

Telemedicine allows a patient and primary physician in rural areas to consult real time with a specialist through two-way video and audio communication. It enables a physician to conduct a clinical examination of a patient across great distances and deliver their expertise where and when needed, regardless of geography. One such example involves a family physician whose patient had a cervical spine fracture. Unsure whether the patient needed air ambulance transport to the nearest medical facility, the primary provider was able to consult with a neurosurgeon off site in another community. They reviewed the patient's x-rays and CAT scan, and jointly determined that while the patient did need a prompt referral he did not need to be transported by air ambulance, saving cost and time away from work and family.

The experience of the community in Kodiak after the installation of the KKFL system is remarkable. Shortly after the cable was installed, doctors at the Kodiak hospital were able to consult with doctors in Anchorage via video conferencing to perform procedures to save the arm of commercial fisherman who had severely damaged it in a fishing accident. According to medical staff at the facility, had the fiber not been installed, if the patient was forced to wait for transportation to Anchorage he may have lost his arm and may have died as a result of the severity of his wounds. But with the ability to walk local doctors through procedures via video conferencing with that data stream being carried over the fiber optic cable in high-definition, the outcome for the fisherman was positive.

In another example, a resident of Kodiak could not be moved by air to Anchorage by virtue of the patient's condition, but needed immediate attention by a team of specialists. This was accomplished by the high-definition linkage that fiber optics provided to the hospital in Kodiak that was a not available prior to this new technology coming on line.

In contrast, as we worked to develop the Northern Fiber Optic Link, we heard from rural health clinic administrators who tell us the new federal mandate to digital health records will be nearly impossible using current satellite technology. Specifically they calculated it would take 27 hours to upload some of the required records if they had to use satellite, whereas with fiber optic cable it would take only minutes to comply.

Public Safety

The NFOL would provide real time transfer of information necessary to access improved public safety services which greatly improves the ability to resolve

public safety issues facing these communities, including rural judicial and administrative hearings via video conference, staffing of public safety offices, improved hiring processes, sexual abuse and domestic violence issues, alcohol related issues, roadway safety, crime lab research, forensic scientific analysis, and enhanced homeland security and national defense capabilities.

The Village Public Safety Officer Program began in the late 1970's as a means of providing rural Alaskan communities with needed public safety services at the local level. The program was created to reduce the loss of life due to fires, drownings, lost person, and the lack of immediate emergency response.

The Program was designed to train and employ individuals residing in the village as first responders to public safety emergencies such as search and rescue, fire protection, emergency medical assistance, crime prevention and basic law enforcement. The presence of these officers has had a significant impact on improving the quality of life in the participating villages. Accordingly, the Village Public Safety Officers (VPSO) are generally the first to respond to many calls for assistance from community members.

Sustainable Communities

Allowing the residents of these regions the educational, employment and healthcare opportunities available in today's world, while preserving their ancestral heritage, and improving the quality of life for the communities they raise their families in would be among the many benefits of the Northern Fiber Optic Link project as it is with the KKFL.

Economic Diversification

Much of the region relies on commercial fishing as its main industry. Tourism related activities, while critical to much of the state, have small impacts on the economies of these communities which are only accessible by air travel, and lack the infrastructure necessary to support large scale tourism.

There will be indirect employment created by access to new information and new employment opportunities as a result of expanded and reliable fiber optic based service. A well-informed populace may generate new perspectives and ideas that could help diversify the region and state's economy beyond the state's heavy economic dependency on resource extraction. Such a long-term solution is key in the effort to displace revenues associated with oil production and federal spending.

Proposed System Design and Architecture

The NFOL system would be a seamless fiber optic cable system with a design that is more than sufficient to meet the total current requirements of users and provide significant additional capacity to accommodate future demand.

If fully built out it would act as the backbone for eventual access for the first time to robust broadband capacity for 142 rural communities, 143 federally recognized Indian Tribes (25% of all Tribes in the US) and a total of 256 federal Tribal organizations (nearly 50% of all Tribal organizations in the US) thereby connecting the region's indigenous peoples, hospitals, medical clinics, schools, remote university campuses, public safety offices, U.S. Coast Guard communications sites, commerce, industry and researchers with real-time telecommunications and internet services.

Benefits of Expanded Broadband for Research and Science

The Northern Fiber Link would provide real-time remote sensing and other advanced capabilities for environmental research, dramatically improving timelines and effectiveness of oceans research on species migration and populations, temperature fluctuations, and salinity thereby helping to provide early warning of weather events and through that provide help to people, including avoiding potential epidemics such as bird-flu, climate and earthquake research and other populous-affecting areas of study. This type of system would be very beneficial to the studies of Arctic warming which can and is affecting the world.

After conducting lengthy discussions with members of the scientific community, researchers and policy experts, and after review of similar projects and projected needs for the Arctic and Bering Seas, KKCC undertook to include in the system backbone configuration three Science Node Interfaces for use in the future. Each Science Node consists of the ability to service the signal and power requirements of the future ocean observatories over cable link separate from the NFOL communication links. The data traffic from the observatories transported over this separate cable would then be multiplexed onto the NFOL network at the cable landing station for access by research teams involved with the supported science projects from any location around the world.

Conclusion

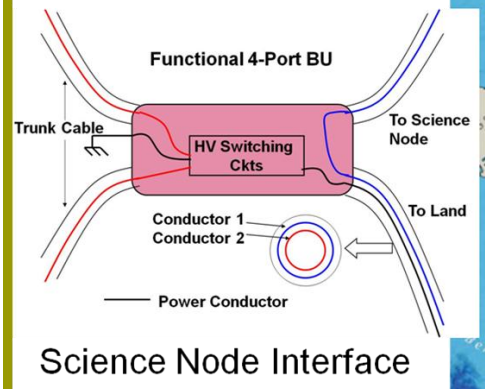
It is apparent to us without having a real-time system deployed in those rural areas of the State of Alaska it will be many years until Alaska comes into the 21st century economy. With the government funding only small phases at a time, with individual carriers there will be no or very little competition in those areas for some time to come, if ever, thereby creating unintended monopolies that can and most likely would keep prices high and a good portion of that price paid by the government through the Universal Service Funds. What is needed is a backbone such as NFOL is proposing that is opened to all carriers at the same pricing therefore creating competition in those rural areas of Alaska to bring down the cost and saving the government millions in USF funds in the future.

KKCC is actively attempting to move forward with the proposed NFOL system and is grateful for the opportunity to share with the Committee OHNC's experience to date in deploying high-speed fiber optic telecommunications services to Native populations. While OHNC is proud of what it has achieved to date in extending this technology to Kenai, Homer and Kodiak and the surrounding area, much more needs to be done to remedy the substantial telecommunications gap experienced by Alaska Natives. That is why this corporation has worked so hard and expended considerable resources to bring fiber optic connectivity to Kodiak and is trying to extend that capability to other Alaska communities, including in particular rural and remote communities in Western Alaska.

We look forward to working with Committee members in the future to help close this enormous service gap, this "digital divide", that exists in rural areas of Alaska but in particular in Western and Northern Alaska for the benefit of Alaska Natives and non-Natives who live at the far extremities of the United States logistical, commercial and telecommunications links.

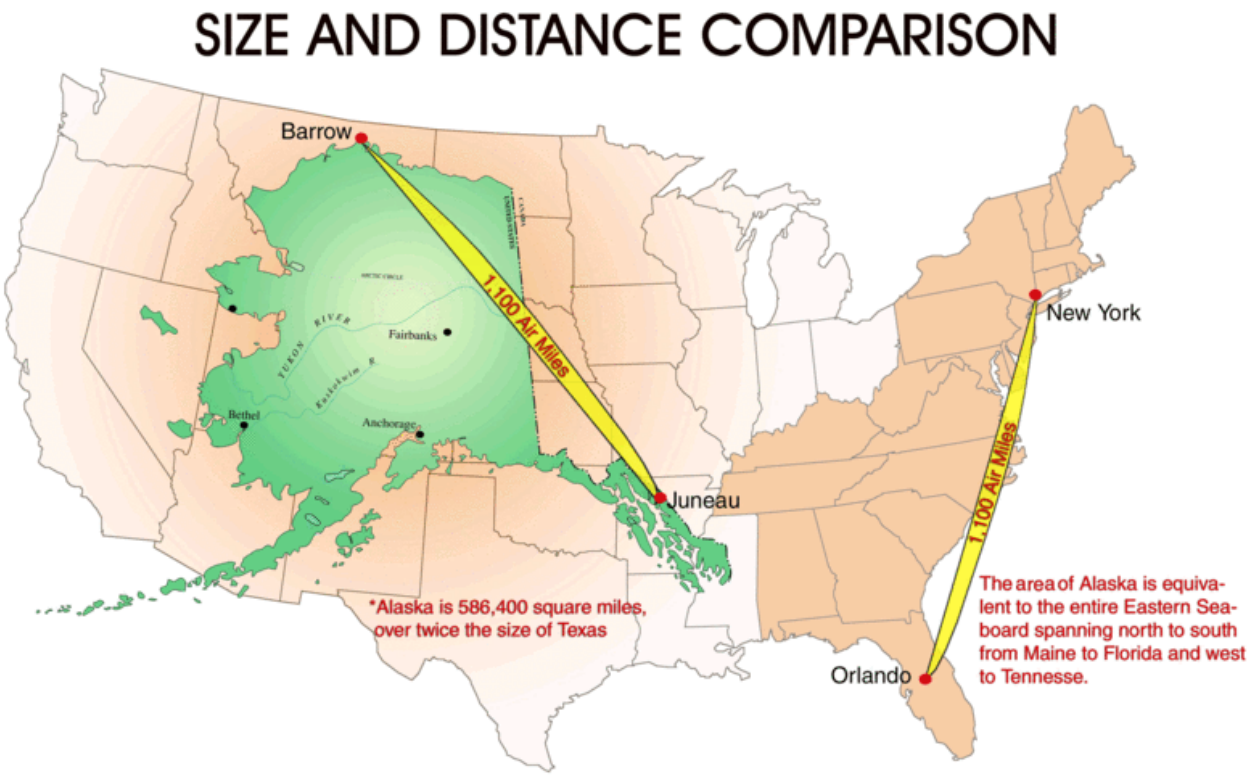
Exhibit A

Science Research Node Interfaces for Future Ocean Observatories: Support for Climate Change Research



Science Node Interface

Exhibit B


SIZE AND DISTANCE COMPARISON
Barrow
1,100 Air Miles
Fairbanks
Bethel
Anchorage
Juneau
New York
1,100 Air Miles
Orlando
*Alaska is 586,400 square miles, over twice the size of Texas
The area of Alaska is equivalent to the entire Eastern Seaboard spanning north to south from Maine to Florida and west to Tennesse.